**FIG. 1**

2807.2.4.10

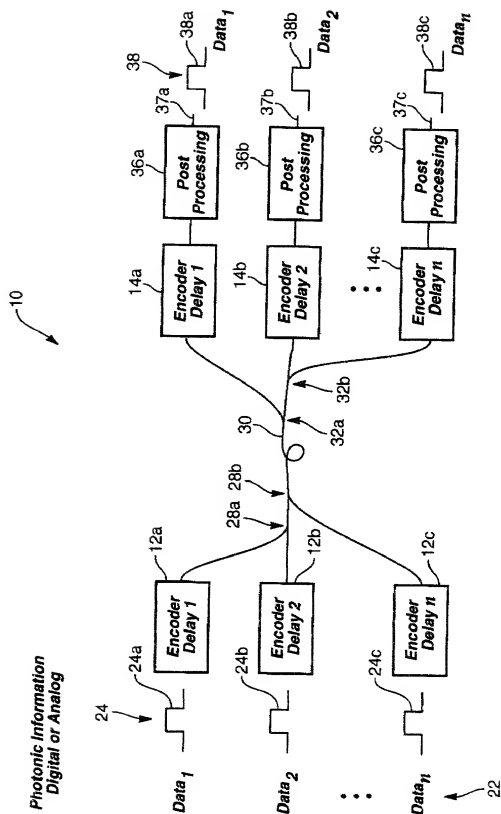
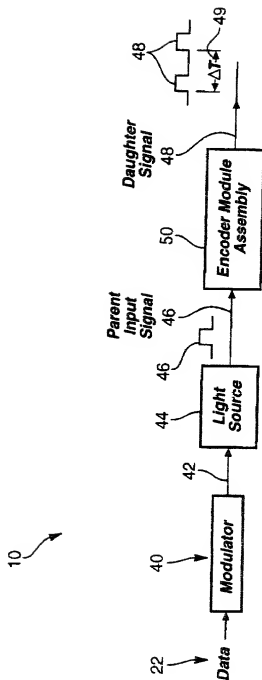


Fig. 2

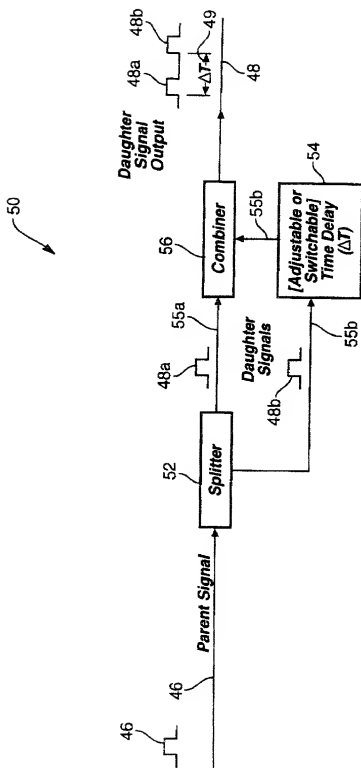
2807.2.4.10



Differential Delay Multiplexer Sender/Encoder

Fig. 3

2807.2.4.10



Differential Delay Multiplexer (DDM) Sender/Encoder

Fig. 4

2807 2.4.

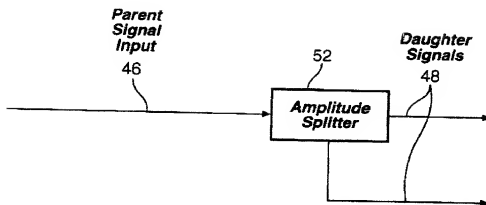
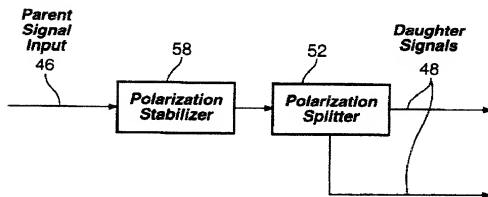


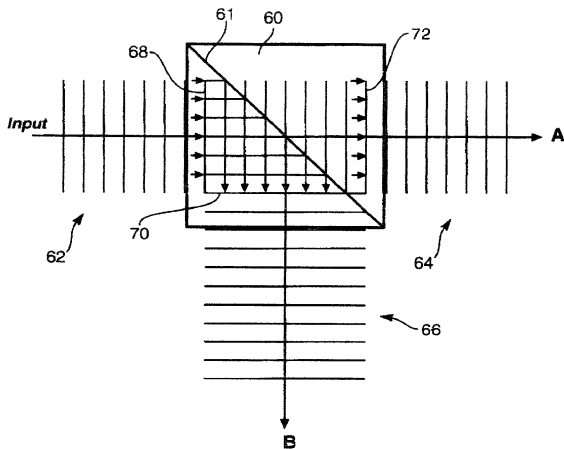
FIG. 5



Splitting Criteria

FIG. 6

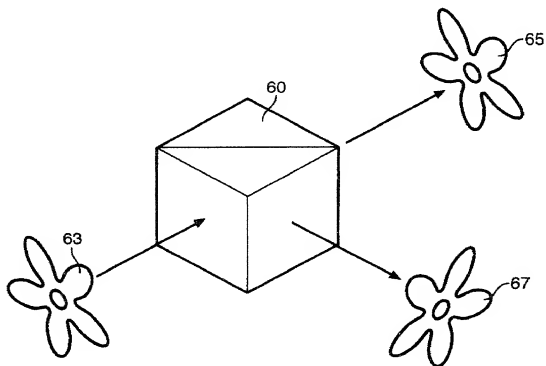
2807.2.4.



Amplitude or Polarization Splitter

FIG. 7

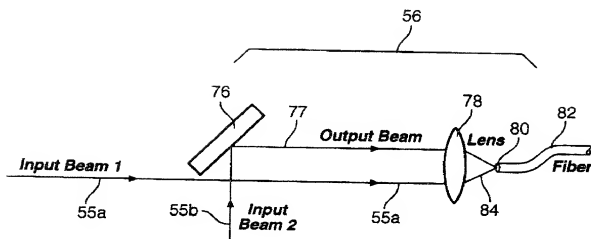
2807.2.4.



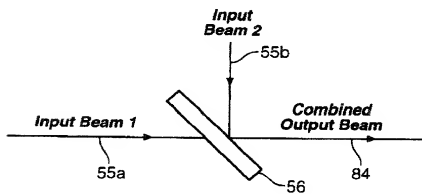
**Image Signals Which
Maintain Spatial Information**

FIG. 7A

2807.2.4.

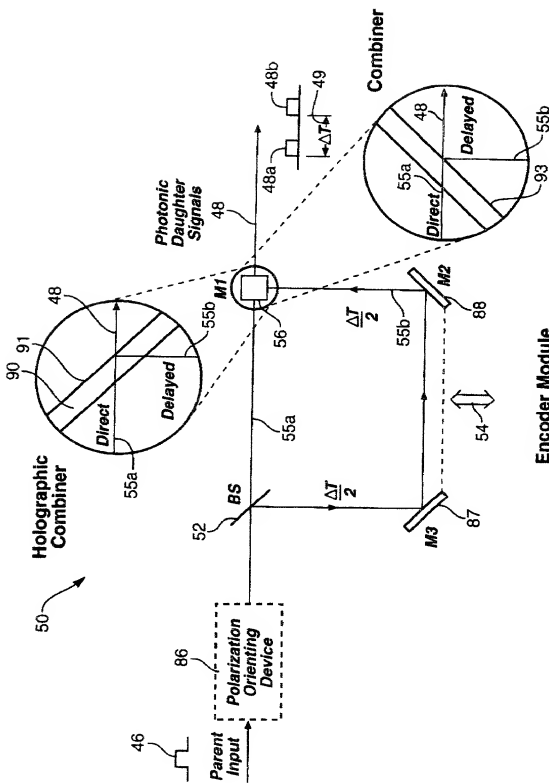


Beam Combiner
FIG. 8



Amplitude or Polarization Combiner

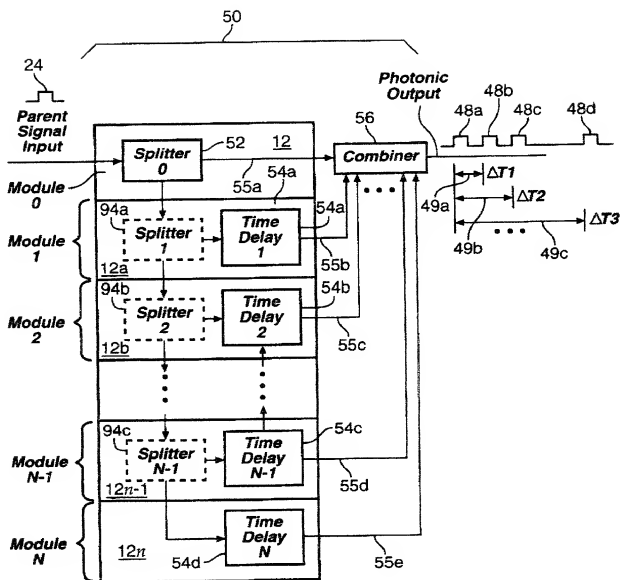
FIG. 9



Encoder Module

Fig. 10

2807.2.4.



Composite Encoder
Module Assembly

FIG. 11

2807.2.4.

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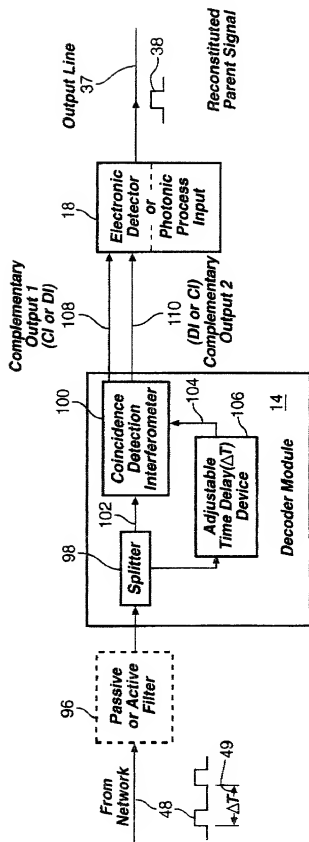


Fig. 12

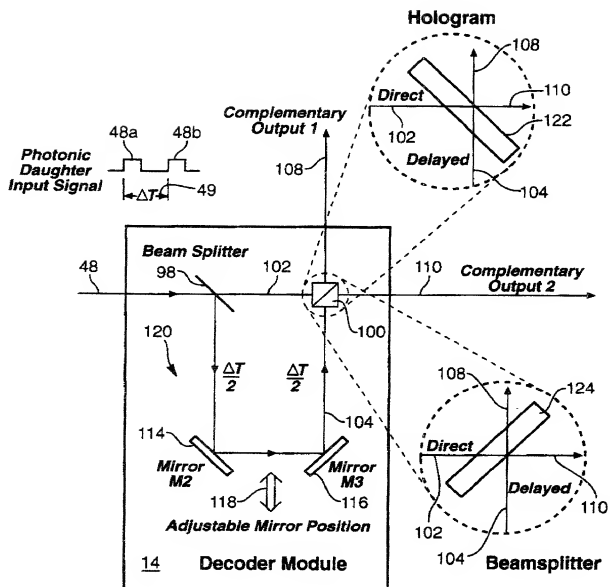


FIG. 13

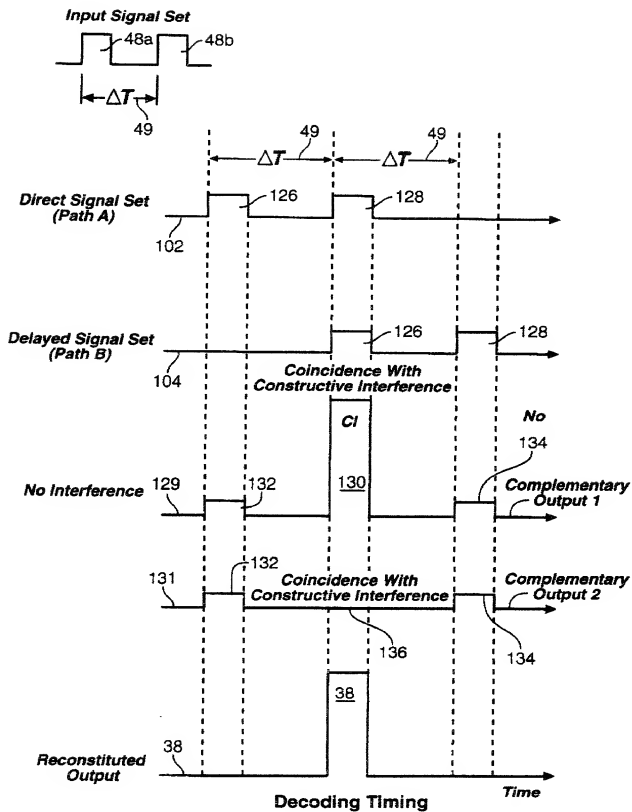


FIG. 14

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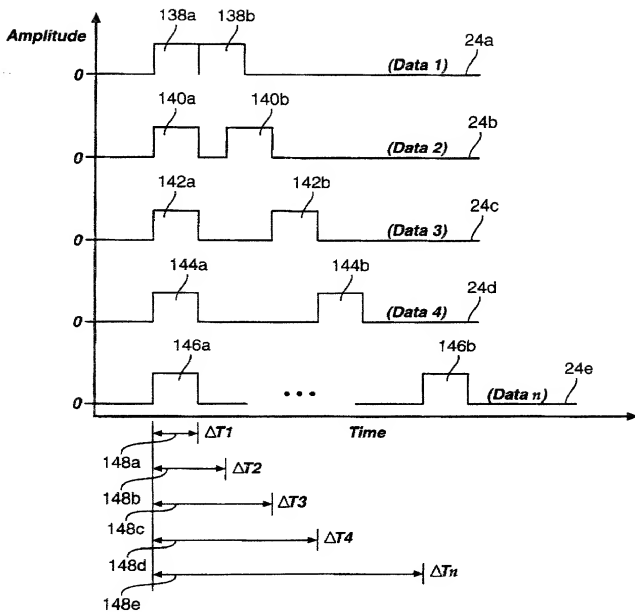


Fig. 15

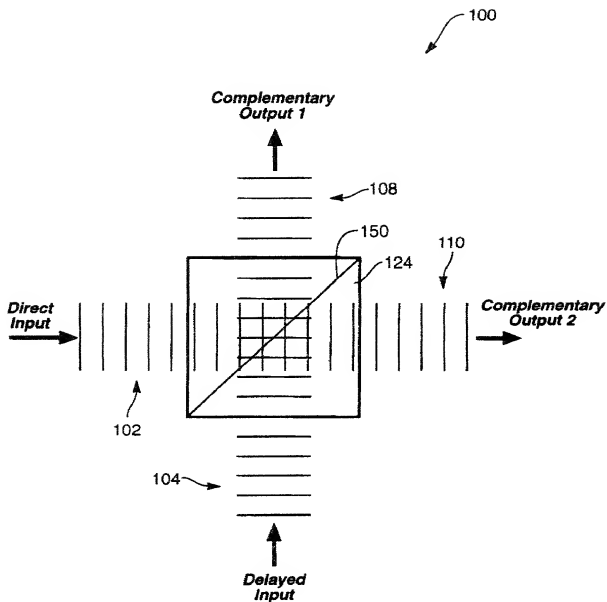


Fig. 16

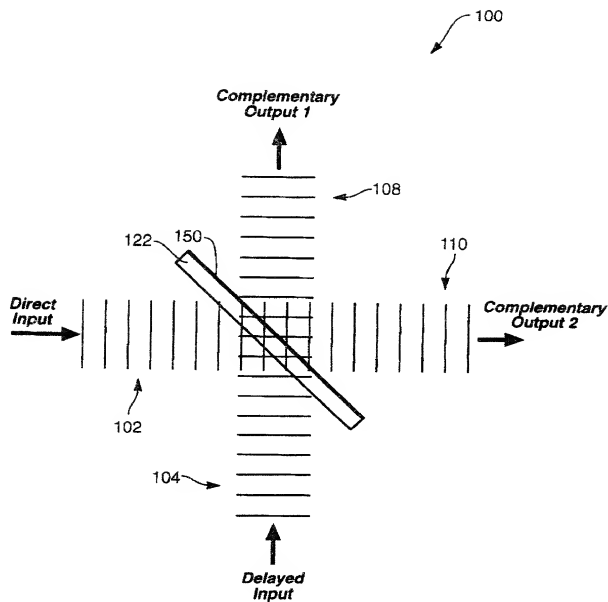
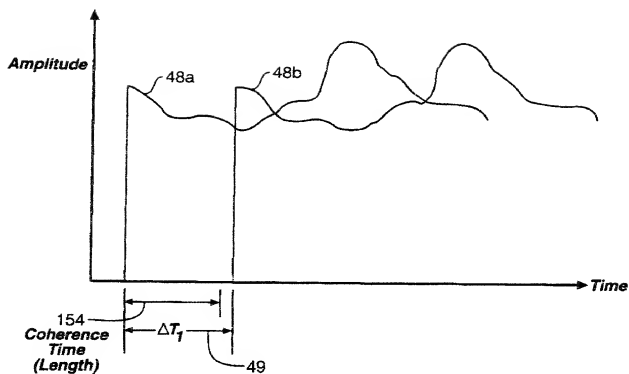


Fig. 17

**Fig. 18**

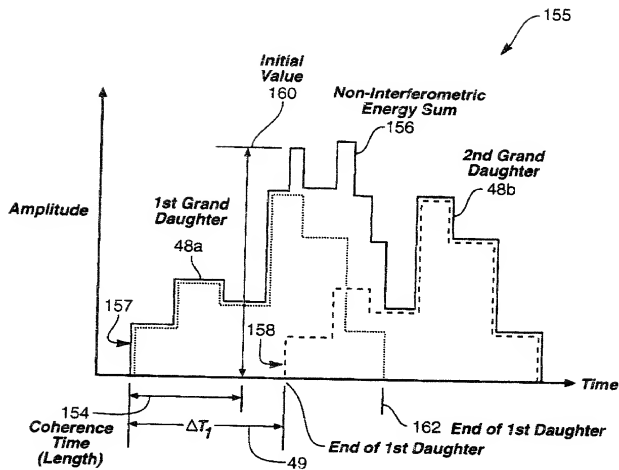
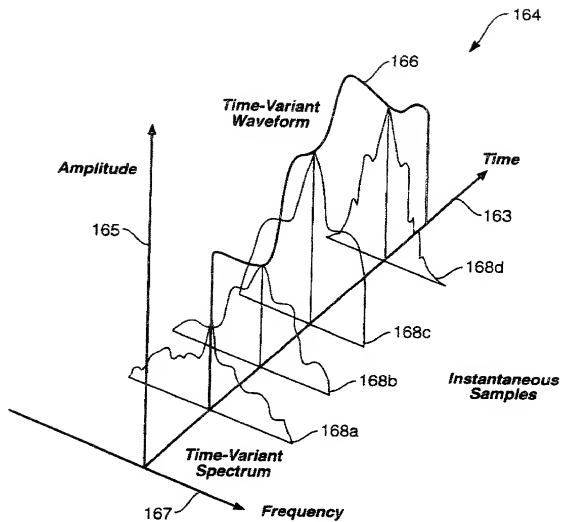


Fig. 19

**Fig. 20**

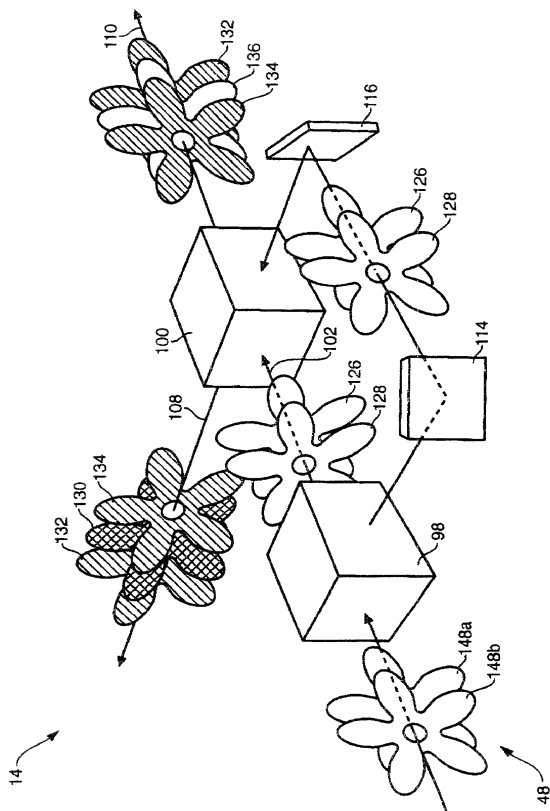
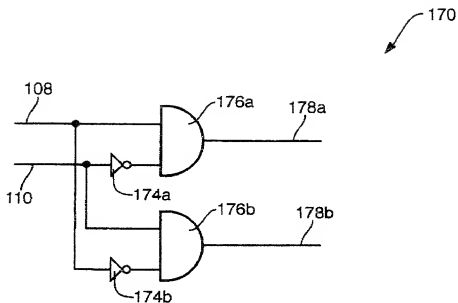
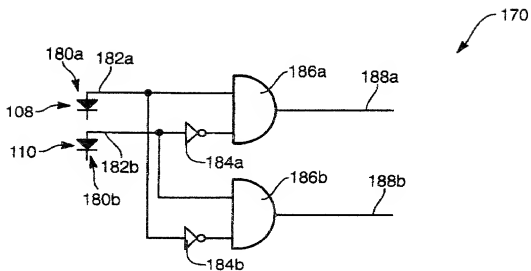


Fig. 21



Photonic Processor

Fig. 22

Electronic Processor

Fig. 23A

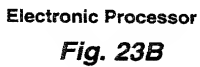
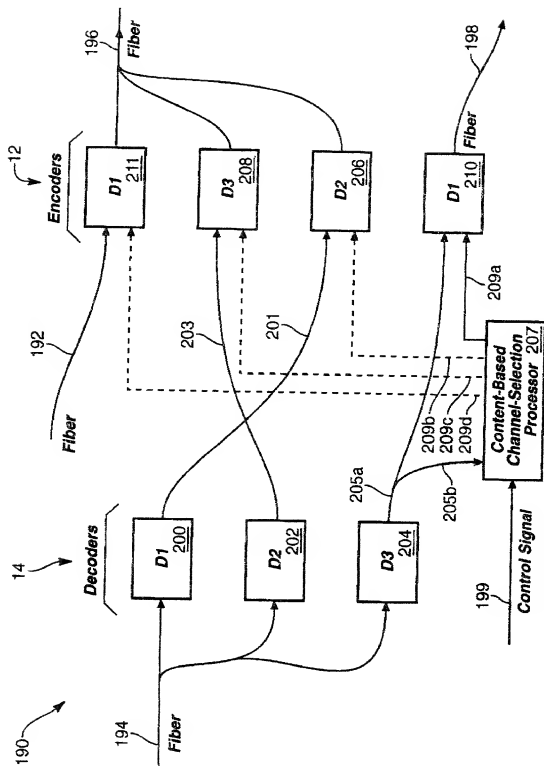
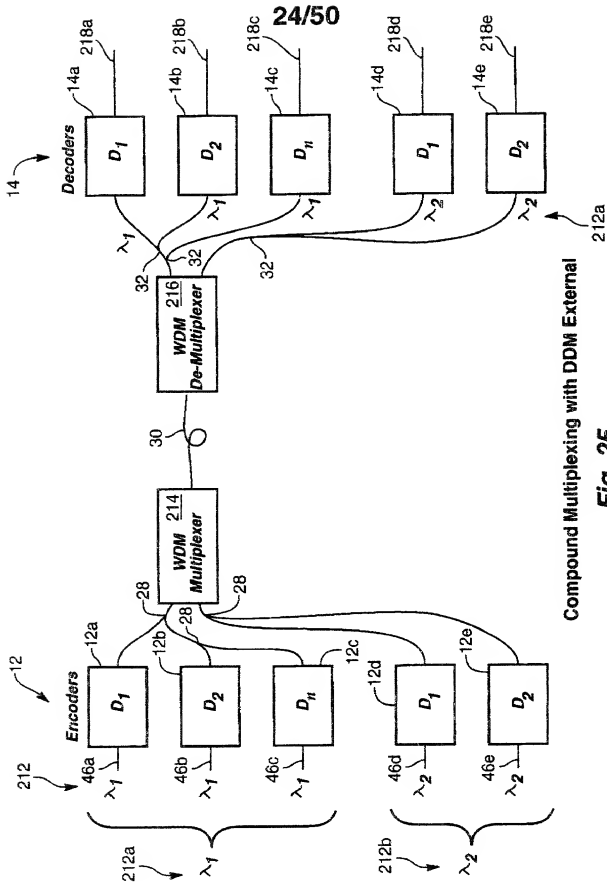


Fig. 23B

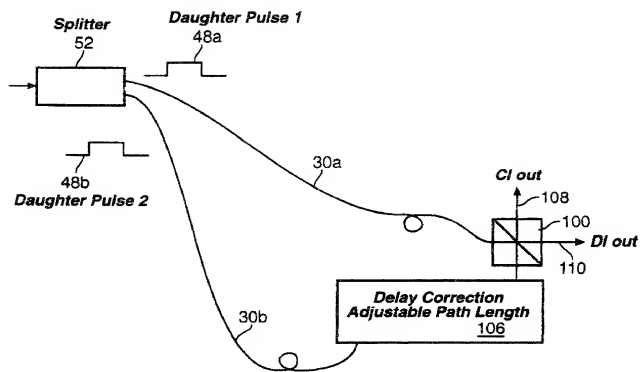


Drop/Rearrange/Add Unbuilding/Rebuilding

Fig. 24





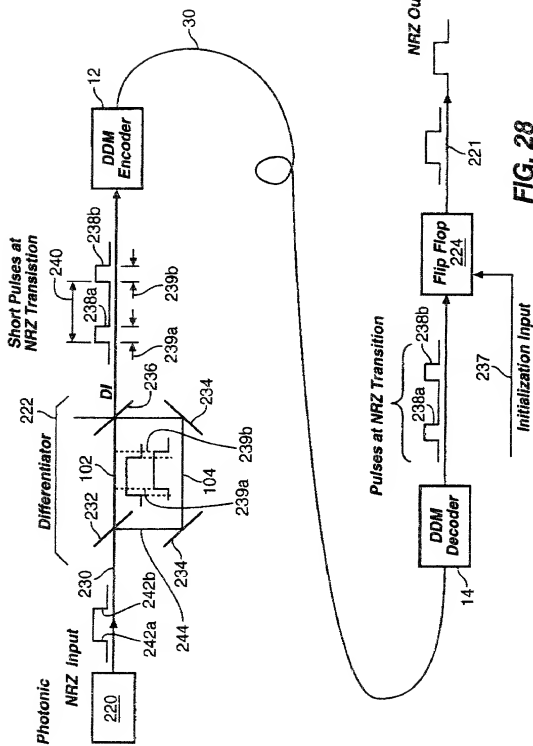


Multiple Delay Path

**Integrated Delay and
Delay Correction**

FIG. 27

Photonic NRZ Interface


FIG. 28

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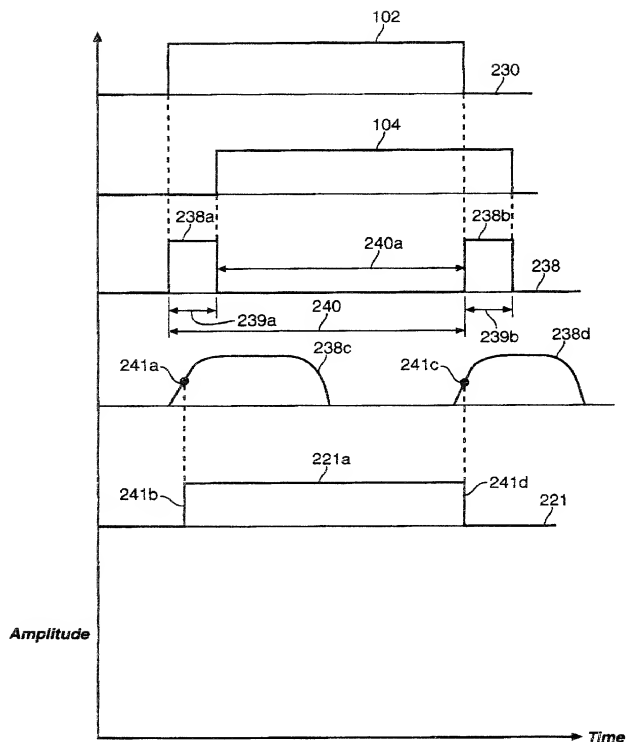
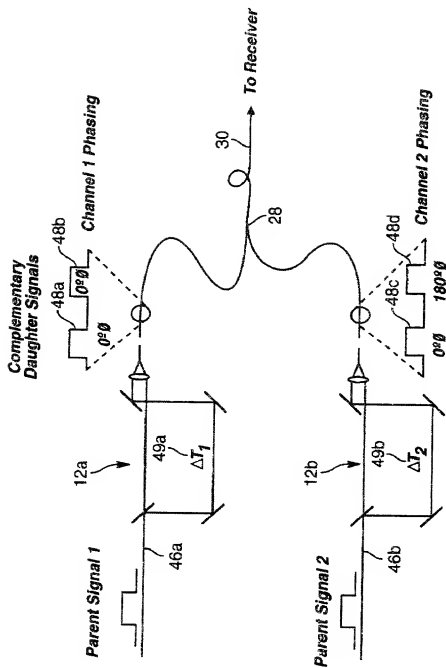


FIG. 29



Phase Sequenced Dual Channel Encoder

FIG. 30

Phase Sequenced Dual Channel Decoder

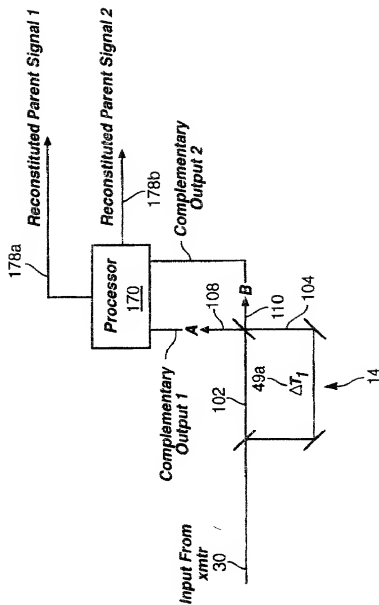


FIG. 31

Phase Sequence Timing

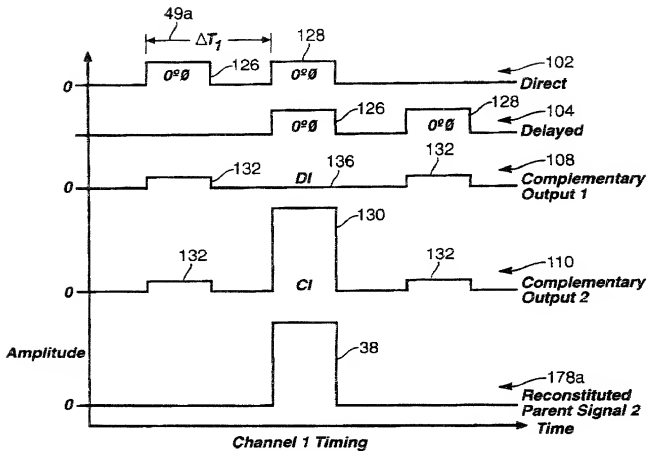


FIG. 32

Phase Sequence Timing

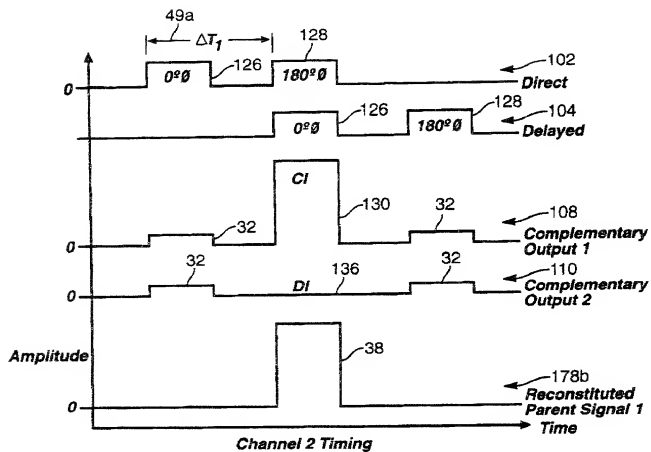


FIG. 33

Quadrature Encoding/Decoding Apparatus

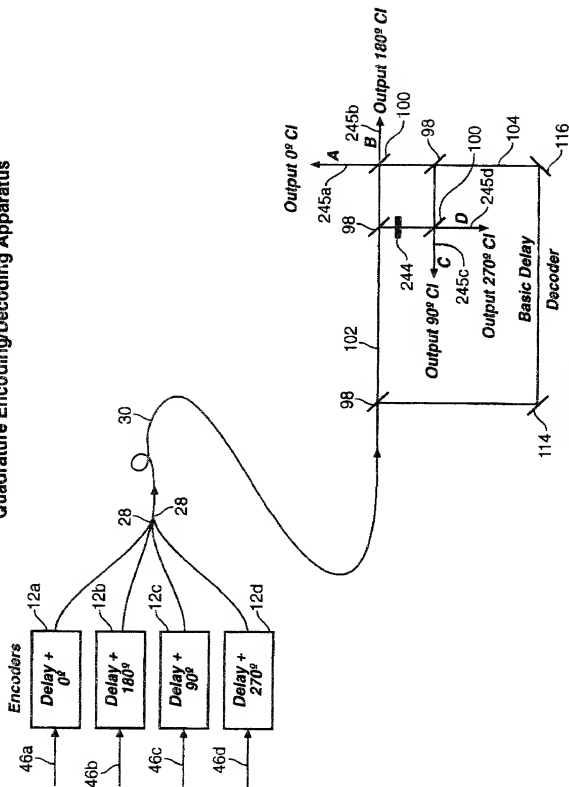


FIG. 34

	<i>Phase of Direct Signal</i>	<i>Phase of Delayed Signal</i>	<i>Quadrature Outputs</i>			
			<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
46a → Channel 1	0	0	<i>CI</i>	<i>DI</i>	<i>C = D</i>	
46b → Channel 2	0	180	<i>DI</i>	<i>CI</i>	<i>C = D</i>	
46c → Channel 3	0	90	<i>A = B</i>		<i>CI</i>	<i>DI</i>
46d → Channel 4	0	270	<i>A = B</i>		<i>DI</i>	<i>CI</i>

↑ 245a ↑ 245b ↑ 245c ↑ 245d

FIG. 35

Quadrature Wave Forms For One Channel

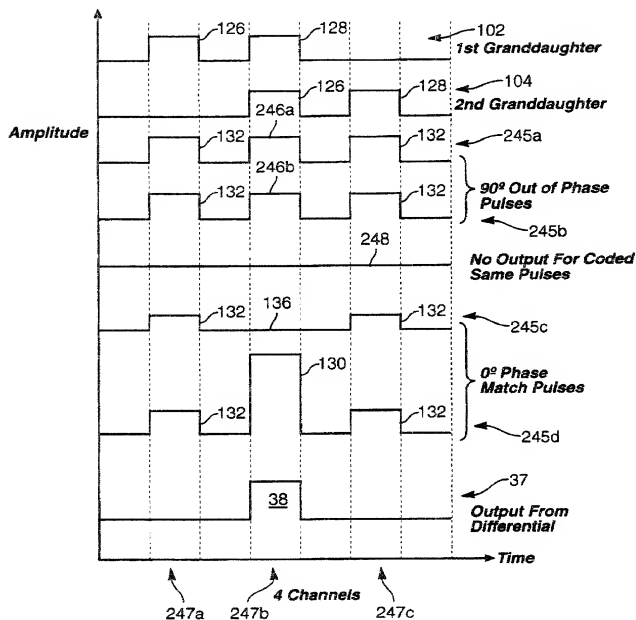


FIG. 36

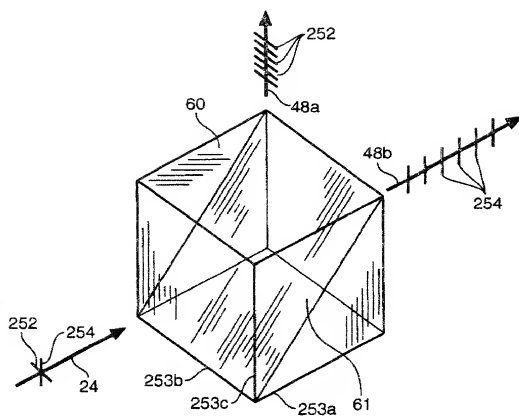
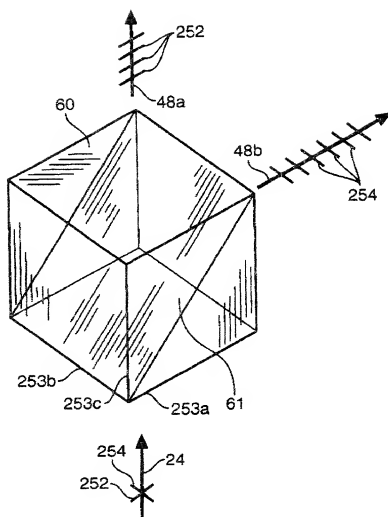
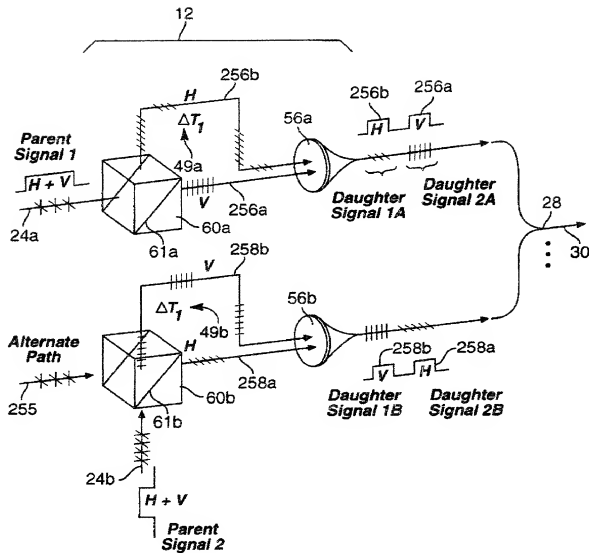


FIG. 37A

**FIG. 37B**

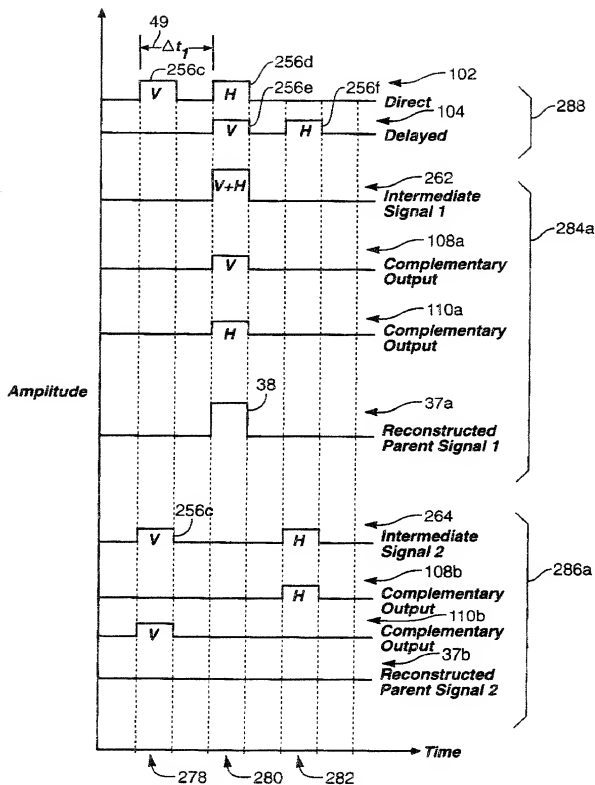


Double Encoder With Polarizations Sequenced to Differentiate 2 Channels Having the Same Time Delay Between Daughter Signals

FIG. 38



FIG. 39



Polarization Sequenced Channel 1 Timing

FIG. 40

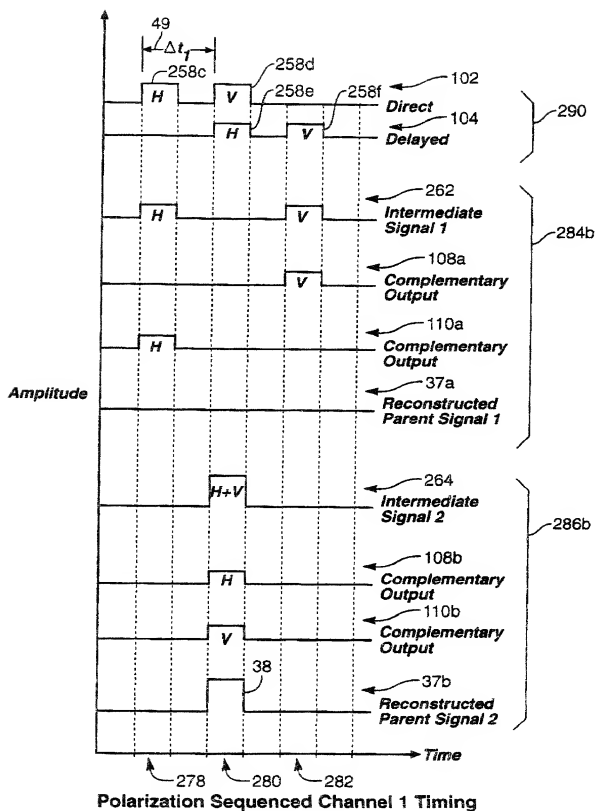
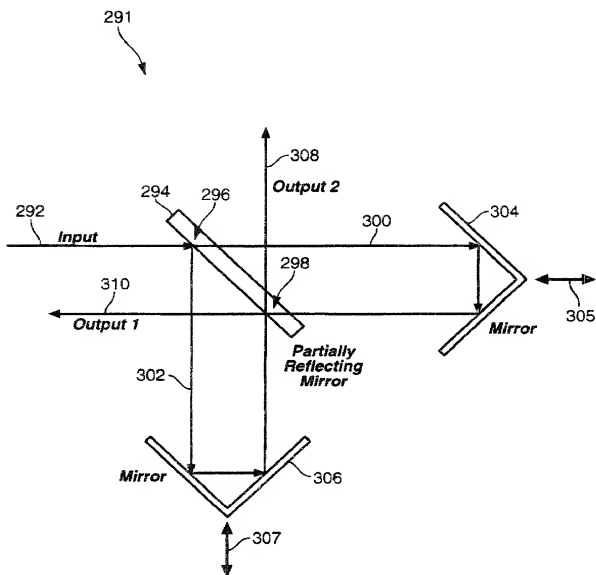


FIG. 41



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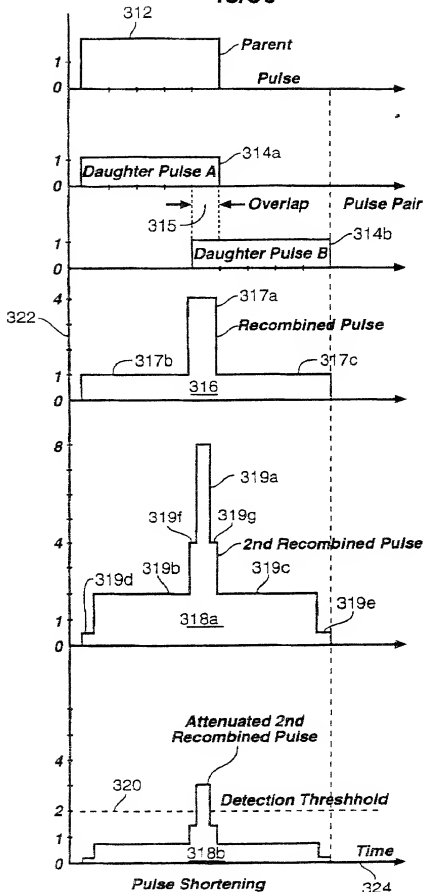


FIG. 43

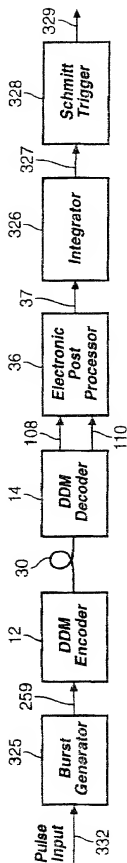


FIG. 44

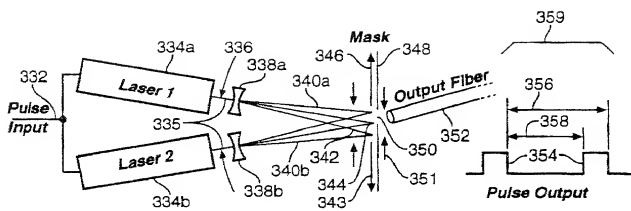


FIG. 45

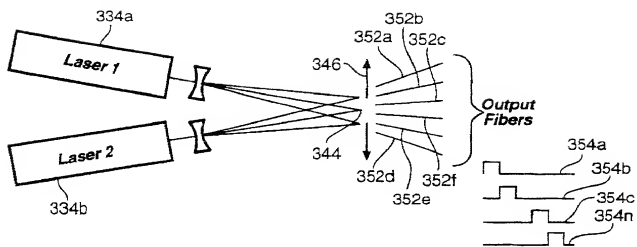


FIG. 46

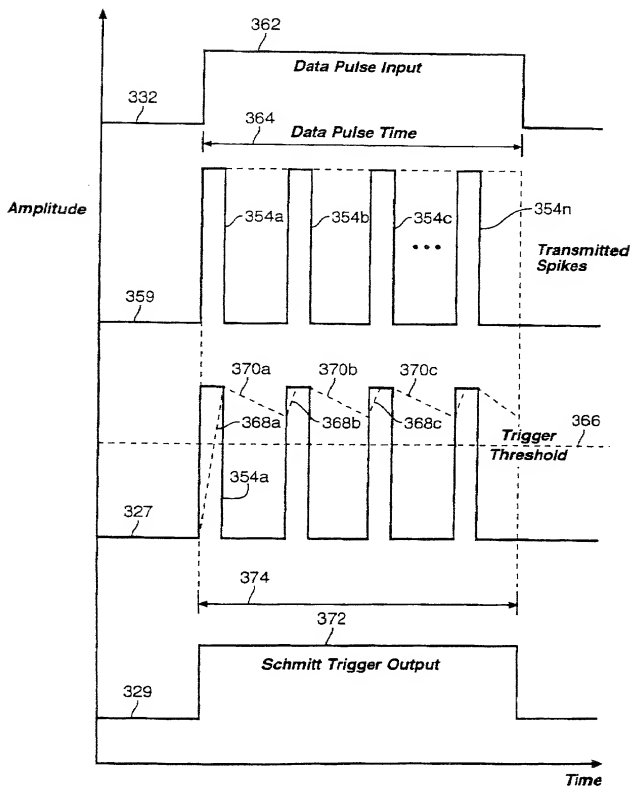


FIG. 47

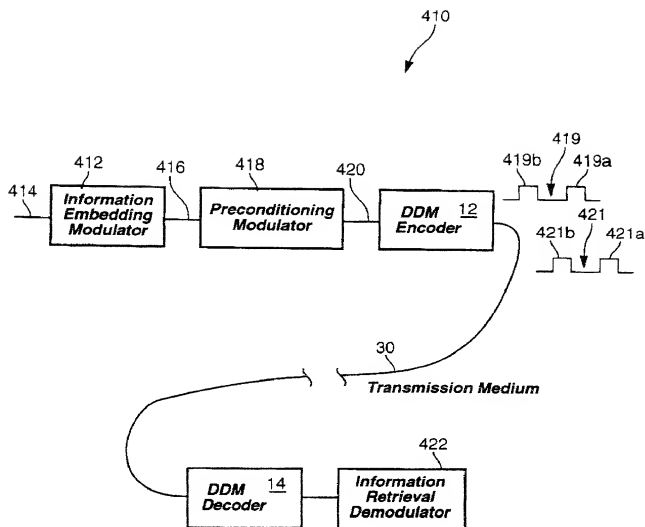


FIG. 48

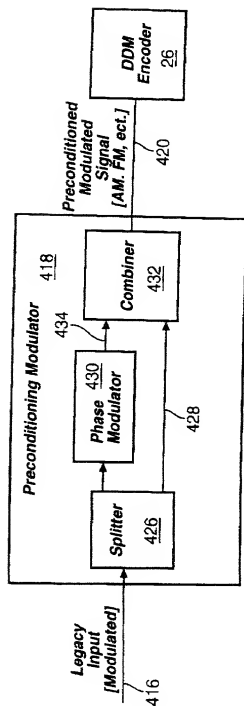


FIG. 49

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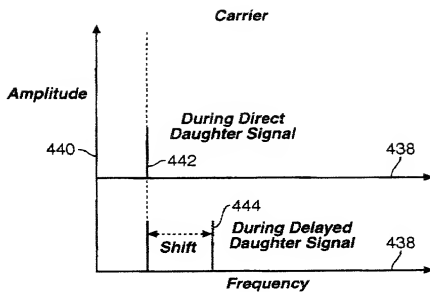


FIG. 50